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having appeared in 1909.[12] It contains descriptions, with illustrations, of the angiospermous trees of central Europe, both native and under cultivation. The present part begins in the midst of *Rhododendron* and ends with *Viburnum.* —J. M. C.

NOTES FOR STUDENTS

Current taxonomic literature.—E. BRAINERD (Bull. Torr. Bot. Club **38**: 1–9. *pl. 1.* 1911) presents an article entitled "Further notes on the stemless violets of the South," and describes two new varieties.—R. E. BUCHANAN (Mycologia **3**:1–3. *pls. 34, 35.* 1911) describes and illustrates a new hyphomycete (*Thyrococcum humicola*), obtained from pure cultures.—C. DE CANDOLLE (Phil. Journ. Sci. Bot. **5**:405–463. 1910) presents "A revision of Philippine Piperaceae" in which he recognizes 22 species of *Peperomia* and 123 of *Piper.* Of the total number about 50 are new to science.—J. CARDOT (Rev. Bryol. **38**:33–43. 1911) under the title "Diagnoses préliminaires de Mousses mexicaines" has published several new species of mosses, based mainly on collections made in southern Mexico by C. R. BARNES and W. J. G. LAND in 1908.—C. CHRISTENSEN (Arkiv för Bot. **10**^{2}:1–32. *pl. 1.* 1910) presents an article "On some species of ferns collected by Dr. CARL SKOTTSBERG in temperate South America" in 1907–1909. The paper includes descriptions of 3 species new to science.—W. N. CLUTE (Fern Bull. **18**:97, 98. 1910) describes and illustrates a new species of *Polypodium* (*P. prolongilobum*) and a new variety of *P. vulgare* L. from Arizona.—E. B. COPELAND (Leafl. Phil. Bot. **3**:791–851. 1910) enumerates upward of 250 species of ferns from Mount Apo, Philippine Islands; of this number 16 are described as new. The author states: "It is probable that this is the richest known fern flora in the world." *Polypodium* and *Dryopteris* are the predominating genera.—A. D. E. ELMER (Leafl. Phil. Bot. **3**:853–1107. 1910–1911) records further data concerning the flora of the Philippine Islands, and describes 138 species of flowering plants as new.—M. L. FERNALD (Rhodora **13**:4–8. 1911)has published a new species of *Scirpus* (*S. Longii*) from Massachusetts and New Jersey.—D. GRIFFITHS (Rep. Mo. Bot. Gard. **21**:165–175. *pls. 19–28.* 1910) in continuation of his studies on the genus *Opuntia* has described and illustrated 10 new species indigenous to southwestern United States and northern Mexico.—E. HASSLER (Rep. Nov. Sp. **9**:1–18, 49–63, 115–121. 1910–1911) has published several new species, varieties, and forms in the genus *Mimosa* and in the families Bignoniaceae and Solanaceae from Paraguay. One new genus (*Rojasiophyton*) of the Bignoniaceae is proposed.—F. D. HEALD and F. A. WOLF (Mycologia **3**:5–22. 1911) have published 41 new species of Texan fungi.—A. A. HELLER (Muhlenbergia **7**:1–11, 13–15. 1911) records further results of his studies on "The North American lupines" and describes two new species: *L. sabulosus* from the sand hills near San Francisco and *L. apodotropis* from Oregon.—A. F. G. KERR and W. G. CRAIB (Kew Bull. 1–60. 1911) under the general title of

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[12] BOT. GAZETTE **48**:312. 1909.

"Contributions to the flora of Siam" have issued an interesting paper on the little known flora of that region. A general sketch of the vegetation is from the pen of Dr. Kerr, and a "List of Siamese plants with descriptions of new species" is the work of Mr. Craib. Several new species are added to the flora and one new genus (*Pittosporopsis*) of the Icacinaceae is proposed.—W. Lipsky (Acta Hort. Petrop. **26**:119–616. *pls. 3–6.* 1910) continues his important publications on the flora of central Asia. The present contribution contains descriptions of several new species, particularly in *Astragalus* and *Potentilla.* The treatment of the latter genus was contributed by the noted specialist Th. Wolf.—T. H. Macbride (Mycologia **3**:39, 40. *pl. 36.* 1911) describes and illustrates a new genus (*Schenella*) doubtfully referred to the Myxomycetes. The material on which the genus is based was found growing on a decaying pine log in the Yosemite Valley, California.—M. E. McFadden (Univ. Calif. Pub. Botany **4**:143–150. *pl. 19.* 1911) presents an account of "A Colacodasya from southern California," and in conjunction with Dr. W. A. Setchell describes a new species (*C. verrucaeformis*) found growing on *Mychodea episcopalis* J. Ag.—E. D. Merrill and M. L. Merritt (Phil. Journ. Sci. Bot. **5**:371–403. *pls. 1–4. 1 map.* 1910) in a concluding article on "The flora of Mount Pulog" have published 11 new species of Sympetalae. Two new genera are described by Mr. Merrill, namely *Loheria* of the Myrsinaceae and *Merrittia* of the Compositae.—W. A. Murrill (Mycologia **3**:23–36, 79–91. 1911) has issued the first two papers of a proposed series of articles on "The Agaricaceae of tropical North America," recording new species in *Leucomyces, Limacella, Russula, Lentinus,* and *Lepiota.*—G. E. Osterhout (Muhlenbergia **7**:11, 12. 1911) describes a new species of *Schmaltzia* (*S. pubescens*) and one of *Carduus* (*C. vernalis*) from Colorado.—F. W. Pennell (Torreya **11**:15, 16. 1911) records a new species of *Gerardia* (*G. racemulosa*) from New Jersey.—C. B. Robinson (Phil. Journ. Sci. Bot. **5**:465–543. 1910) begins a monographic consideration of the "Philippine Urticaceae," treating 9 genera to which are referred 86 indigenous species, about one-half being new to science. One new genus (*Elatostematoides*) is proposed.—E. Rosenstock (Rep. Nov. Sp. **9**:67–76. 1910) has published 16 new species of ferns, 5 of which are from Costa Rica.—P. A. Rydberg (Bull. Torr. Bot. Club **38**:11–23. 1911) in continuation of his "Studies on the Rocky Mountain flora" has described several new species of Compositae.—G. Schellenberg (Mitt. Bot. Mus. Univ. Zürich, No. 50, pp. 1–158. 1910) under the title "Beiträge zur vergleichenden Anatomie und zur Systematik der Connaraceen" has published the results of a detailed study of this family, recognizing 17 genera and over 100 species. One new genus (*Santaloides*), based on *Rourea Afzelii* Planch. from Africa, is new to science.—A. K. Schindler (Rep. Nov. Sp. **9**:123–125. 1911) under the title "Halorrhagaceae novae I" includes two new species of *Gunnera* from Peru.—R. Schlechter (*ibid.* 21–32) has published 20 new species of orchids, 13 of which are from Central and South America.—F. J. Seaver (Mycologia **3**:57–66. 1911) publishes the results of studies in Colorado fungi and includes descriptions of two new species, namely *Ascobolus xylophilus* and *Godronia Betheli.*—D. R. SUMSTINE (*ibid.* 45–56. *pls. 37–39*) under the title of "Studies in North American Hyphomycetes I" presents a taxonomic treatment of *Rhinotrichum* and *Oliptrichum*, recognizing for the former 13 species, of which 3 are new to science.—F. THEISSEN (Broteria, Ser. Bot. **9**:121–147. *pls. 5–9.* 1910) in an article entitled "Hypocreaceae Riograndensis" has published 15 new species. The same author (Beih. Bot. Centralbl. **27**^{2}:384–411. 1910) under the title "Fungi Riograndensis" lists about 150 species from southern Brazil, 10 of which are new to science. One new genus (*Creosphaeria*) is characterized and is said to be intermediate between *Rosellinia* and *Hypoxylon.*—I. TIDESTROM (Am. Mid. Nat. **1**:165–171. *pl. 11.* 1910) has published 3 new species of *Aquilegia* from western United States and gives a synopsis of 10 recognized species.—I. URBAN (Ber. Deutsch. Bot. Gesell. **28**:515–523. *pl. 15.* 1911) has published a new species of *Loasa* (*L. Plumeri*) and a new monotypic genus (*Fuertesia*) of the Loasaceae from Sto. Domingo.—W. WEINGART (Monats. für Kakteenkunde **21**:5–7. 1911) describes a new species of *Phyllocactus* (*P. Eichlamii*) from Guatemala.—R. S. WILLIAMS (Bull. N.Y. Bot. Gard. **6**:227–261. 1910) under the title "Bolivian Mosses, Part II," has described 18 new species. The same author (Bull. Torr. Bot. Club **38**:33–36. 1911) records two new species of mosses from Panama.—N. N. WORONICHIN (Bull. Jard. Imp. Bot. St. Petersb. **11**:8–19. 1911) records a list of fungi collected in southeastern Russia, and includes a new ascomycetous genus (*Rhodosticta*) parasitic on the leaves of *Caragana frutex* Koch.—J. M. GREENMAN.

The number of chromosomes.—In 1909 STRASBURGER made a cytological study of the parthenogenetic *Wikstroemia indica*, and now he has succeeded in securing from the rather inaccessible Himalaya region material of the nearly related *W. canescens*, in which fertilization regularly occurs. From an investigation of *W. canescens* and a study of the literature of forms with unexpectedly large numbers of chromosomes, some interesting conclusions are reached.[13]

High chromosome numbers can be shown to be the result of multiplication of whole chromosomes, so that the organism becomes polyploid, with a diploid gametophyte and tetraploid sporophyte, instead of the usual haploid and diploid generations. Such increases in chromosome numbers must be referred to mitotic division, which does not get to the separation of the daughter chromosomes, or, if daughter nuclei are formed, they reunite. The increase in number comes usually from a longitudinal division, which gives like products, and it is probable that the phenomenon takes place in the fertilized but not yet divided egg. The increase in the number of chromosomes is accompanied by some increase in the size of the nucleus and protoplast.

In the nuclei of sporophytes which are more than diploid, the homologous

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[13] STRASBURGER, EDUARD, Chromosomenzahl. Flora **100**:1–50. *pl. 6.* 1910.